

no abdominal symptoms a mild purge was given where necessary. Very few were able to take any nourishment during the first twenty-four hours. The headache was so severe in the cases amongst the female staff that treatment was directed to alleviate that. Nothing seemed to greatly influence the influenza headache for the first twelve hours at least. The best results were got from a mixture of pulv. ipecac. co. 15 gr., sodae salicylat. 10 gr., and phenacetin 10 gr. Ammoniated tincture of quinine was also given to some of the female staff, but it had not a fair trial as the taste was much objected to. It eased the symptoms slightly but the temperature followed the usual course. When, however, the epidemic was spreading on the female side, each of the four male wards was provided with a large bottle of the tincture which was largely partaken of by attendants and patients as a preventive. This no doubt had much to do with the non-spread of the disease on the male side, while the writer, who has had frequent attacks, ascribes his immunity from the present epidemic to the taking of a daily dose before the morning visit. Sixty-three cases, including all the males except one, were treated with carbolic acid. It was given in 1-minim doses of acid. carbolic. liq. in not less than 2 oz. of water, immediately on the onset of the symptoms, and repeated every two hours till the temperature fell to normal. In all the cases with the exception of five, the temperature fell below normal within twenty-four hours, and in a great many cases within twelve hours. This was in marked contrast to the cases not so treated. Of the 5 cases in which the temperature remained up for more than a day, four had a normal temperature by the end of the second day, and the fifth, who had a phthisical tendency, on the third day. In all the cases a complete four-hourly record of the temperature was kept, and the appearance of the charts of those treated with carbolic acid with their sudden fall below normal from 102° and 103° in twenty-four hours was striking compared to those of the cases not so treated.

A feature in all the cases treated with carbolic was the great perspiration after the first or second dose, quite remarkable in some cases, especially of the males. With the fall of temperature, and often before it, the headache and much of the exhaustion passed off, and the comparative comfort which these cases enjoyed within twenty-four hours of the first symptoms was noteworthy. Quite a number were sick after the first or second dose of carbolic, but in these cases it usually sufficed to give the dose four-hourly. Later on it was found that in those who had previously been given a purge there was no sickness from the carbolic; and on giving all the cases afterwards a purge, preferably castor oil, there were no further cases of sickness, even where the acid was continued for twenty-four hours. It was in no case given longer, and there were no signs in any case of bad effects from its use.

It may only be a coincidence that the number of cases began to decline from the day on which every one affected was put on carbolic acid, but it is highly probable that the infectivity of the cases was thereby lessened. The male cases were put on carbolic from the start, and this had no doubt much to do with the non-spread of the disease to the healthy patients sleeping in the temporary male hospital. Dr. Clifford Albutt² is of opinion that influenza is infectious only when the respiratory system is affected. Slight bronchitis, it has been already stated, accompanied 20 per cent. of the cases, but these were mostly amongst the early cases, and on the male side there was no affection of the respiratory tract. Still, the first cases of all, the three nurses in the hospital had also no respiratory symptoms, and yet they undoubtedly were infections.

RELAPSES AND COMPLICATIONS.

There were only three relapses, due in each case to the patient getting up too soon, and, as might be expected, all occurred among the female staff. Going on duty meant in these three cases going out through a cold corridor. In the case of the inmates rigid measures were taken to prevent their getting up, and there were no relapses. A thin, poorly-nourished girl, who was given to undressing herself at odd times during the day, developed a typical lobar pneumonia, but she had very little headache, and no muscular pains, and it is doubtful if she had any preliminary influenza.

There were 8 cases of ear disease, all developing on the third or fourth day of the influenza. Three of these were severe otitis media, the others being abscesses in the external auditory canal. A feature of the otitis media was the rapidity with which the pus accumulated; there was rupture of the membrane and copious discharge of pus not long after the

intense throbbing pain indicated the condition. Great benefit was derived in all the ear cases from the use of listerine. In the first case that occurred, after the pus had begun to discharge, the temperature kept going up, the patient becoming delirious and ultimately almost moribund. The ear was well syringed with water and then filled up with pure listerine, the head being held in position for half an hour. The ear was then plugged with wool and the listerine repeated every two hours, the cavity being kept filled each time for half an hour. The temperature fell from 105.6° to 102° in eight hours and to normal in two days. Listerine was used in the other cases with similar results.

One female patient, who was convalescing from an attack of melancholia, after having all the symptoms of influenza for two days, passed into a condition of acute delirious mania, with a high and remittent temperature, dying of exhaustion in ten days.

The only patient who took the disease while confined to bed was a female melancholic of 68. She had no organic cardiac disease, but she died in about twelve hours after the onset of influenza from cardiac failure, her symptoms suggesting acute poisoning of the heart. Another female developed acute meningitis after her temperature from influenza had been normal for two days. This girl was the only case amongst the relapses or complications who had carbolic acid, but she was so sick with it that she only attempted two doses.

The deaths therefore were 3, or 5 per cent. of the total female patients affected, and less than 4 per cent. of the total cases. This is a small percentage for any epidemic, and markedly so when one considers that the average age of those affected was well over 50 years, even though most of them were in good health.

Amongst the males who were treated with carbolic acid—with one exception, an attendant—there were no relapses or complications. That attendant made a slow convalescence, and four weeks after getting up developed pyelitis. He complained of severe pain in the back greatly aggravated by pressure over the left kidney, and his temperature rose to 106°. In twenty-four hours his urine was loaded with pus. He had warm sitz baths, milk diet, and urotropine 10 gr. t. i. d. His temperature fell to 102° after the discharge of pus, to normal on the fifth day, and he was quite well in ten days.

The points of note in the epidemic seem to be:

1. The spread of the disease from ward to ward in series, in spite of the fact that all the patients were coming into daily contact, and that on the female side patients from different wards slept side by side in the same dormitory.
2. That, although the staff were affected before the patients, the disease spread along the building in the manner indicated.
3. The great proportion of women affected, and the fact that the disease attacked almost exclusively the strong and working patients.
4. The effects of carbolic acid in the treatment and its probable effects in diminishing the risk of spread of the infection.
5. The septic nature of the complications and the small percentage of deaths.

REFERENCES.

- ¹ Robertson and Elkins, BRITISH MEDICAL JOURNAL, February 1st, 1890.
- ² T. Clifford Albutt, *ibid.* May 6th, 1905.

EPIDEMIC CEREBRO-SPINAL MENINGITIS IN NORTHERN NIGERIA.

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DURING the month of February, 1905, a very serious and widespread epidemic of cerebro-spinal fever broke out in Yola, a town of 22,400 inhabitants, situated on the Benue River, and about 1,000 miles from the coast. The epidemic in Yola province lasted from February 12th until the end of April, it spread over the greater portion of Northern Nigeria, travelling in a westerly direction, and was very largely confined to the trade routes.

The months in which it occurred are the hottest in the year, the temperature on several occasions reaching 108° in the shade. The natives state that they have no recollection of any such disease ever having visited them before, but I understand that in other parts of the protectorate spotted fever has been previously recognized.

The first case to occur here was that of an Arab who had just returned from a pilgrimage to Mecca. The villages on the road through which he passed were subsequently attacked by the disease. Whether his advent had any relation to the present outbreak I am unable to say, but it certainly looked very suspicious.

The present epidemic has been no respecter of persons, rich and poor, young and old, males and females, being alike attacked, nor has its distribution been confined to any particular area of those towns visited. In the towns attacked, the disease remained active for from three to four weeks, then suddenly disappeared.

Incubation Period.

One of my servants, a boy 12 years of age, ran away and slept in an infected compound, where there were 2 cases at the time. He developed the disease on the third day, and died on the fifth day. The Residency where the boy was living is two miles away from the nearest infected area, and at that time the strictest isolation was being enforced, so that as far as I know he came into contact with no infected cases. This case would show that the incubation period was as short as three days.

Food as a Source of Infection.

One case, a child 3 months old, developed the disease, and died; it had not received any other kind of food, its mother was healthy at the time, and did not subsequently contract the disease, so that I think in this particular case food did not act as a carrier of the disease.

The disease is, I think, not acutely infective; I myself went freely amongst them. I knew of one case where a man slept in a house in which a patient had died seven days before; this man afterwards contracted the disease, he not having visited an infected area after having slept in the infected house.

Prodromata.

None were observed in the rapidly fatal cases, but in the milder ones, epistaxis, accompanied by a violent headache and a feeling of lassitude, was noticed.

Symptoms.

These were typical, with the exception of the eruption, which was rarely noticed in adults, probably owing to the difficulty in detecting it in dark-skinned races; in the case of children it evidenced itself in the form of an herpetical eruption on the backs of the hands, wrists, and fingers, back of the neck, dorsum of feet, and over the clavicles. The tongue was dry and covered with a thick white fur; constipation was the rule.

There was nothing characteristic about the fever, no definite course being followed. In the malignant cases the temperature was sometimes subnormal.

Retraction of the head and neck was present in all cases.

Kernig's sign was present in 90 per cent. of the cases examined.

Complications.

Pneumonia, bronchitis, and arthritis were observed.

Sequelae.

Blindness, deafness, and partial paralysis.

Prognosis.

The prognosis was favourable in those who survived the first four or five days; the fatal cases as a rule died in from one to three days.

Treatment.

Purgatives and opiates were administered with doubtful result.

Mortality.

Three to 5 per cent. of the total population of infected towns were attacked, with a death-rate of 50 per cent. of the infected cases.

Rapidity of onset was a marked feature of the outbreak. To cite a case: Two men went to draw water from the river, about 300 yards off; both these men were rendered unconscious, and had to be carried back, both eventually dying.

Malignant cases occurred as a rule during the first week of outbreak in a town, and the milder ones towards its close.

Isolation.

Strict isolation proved effectual here at the Residency, where there is a population of about 250 inhabitants, no cases having occurred, although the epidemic was raging all around within a radius of two to three miles.

Pathology.

Lumbar puncture revealed a cloudy fluid somewhat flocculent, and occasionally blood-stained.

Nothing was observed on blood examination. The following are the notes of the *post-mortem* examination in the case of a man 30 years of age: Duration of disease five days; delirium set in on the first day, and persisted till the end. The membranes at the base of the brain were deeply congested, and fibrinous deposits and some purulent points were discovered beneath the dura mater in the region of the pons and cerebellum; in parts the membranes were adherent to the cortex of the brain. The spinal membranes were similarly hyperaemic, and pus was present in parts beneath the membranes. All the other organs were apparently healthy.

What struck me as a very strange coincidence was the simultaneous appearance of spotted fever in New York, Europe, and Northern Nigeria. Was the sun spot which was visible at that time a predisposing factor in its production?

TREATMENT OF PUERPERAL ECLAMPSIA.

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I HAVE read with great interest the report of the discussion on eclampsia occurring in pregnancy at the last meeting of the British Medical Association, and also the leading article on the subject in the BRITISH MEDICAL JOURNAL of September 23rd.

There is one method of treatment that I do not see definitely mentioned, though I have carried it out during the last twenty-nine years. It has much to recommend it in country practice, where, owing to the distance a patient may live away from the medical attendant, frequent visiting is impossible.

This treatment is, when called to a case of eclampsia, to commence at once the administration of chloroform, to give it slowly till the patient is fully under its influence; to keep her under till labour is terminated, so that she shall be partially under its influence for some time afterwards. This treatment I have found very successful, and have never seen any recurrence of the convulsions after labour, provided a short time only has elapsed after the first convulsion before the administration of chloroform is commenced.

The following cases illustrate this treatment:

CASE I.

Called to a multipara at 2 a.m. Third pregnancy. Found her insensible, the convulsions being almost tetanic in character. At once gave chloroform till the patient was fully under its influence, with complete muscular relaxation. Made a vaginal examination, and found the os slightly dilated with breech presentation. Introduced Barnes's bags and terminated labour in about an hour, giving chloroform slowly all the time. The patient slept eight hours afterwards. When she regained consciousness she said she felt well, except feeling sore all over from the effect of the convulsions. The child was alive.

CASE II.

Primipara, unmarried, 20 years of age. She had been treated by an unqualified man for "ovarian dropsy." Her parents did not know she was pregnant. I found her lying insensible, having had a severe convulsion. Another commenced soon after my arrival, so I at once administered chloroform till there was complete muscular relaxation. I then easily dilated the os with my hand and terminated labour with the forceps. Patient slept several hours and felt well on regaining consciousness. There was no return of the convulsions. The child was living.

CASE III.

Primipara, under the care of another practitioner. He administered chloroform and continued it at intervals for some hours; but as he was taken ill he asked me to attend the case. I saw the case twelve hours after the first convulsion, and as the os was fairly dilated I gave more chloroform and terminated the labour with the forceps. She had no more convulsions and made a good recovery. The child was alive.

CASE IV.

Multipara, about 36 years of age; very stout. Only five months advanced in pregnancy. Convulsions very severe on my arrival. Gave chloroform fully. Sent for my assistant and cleared out the uterus. Patient slept some hours and had no more convulsions.

CASE V.

Primipara; short and very stout. Strongly convulsed on my arrival. Gave chloroform fully. Sent for my assistant. Dilated the os with my hand and terminated labour with the forceps. Patient slept some